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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/493,192	01/28/2000	Toshimitsu Kaneko	0039-7541-2SRD	1924
22850	7590	02/03/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			AKHAVANNIK, HUSSEIN	
			ART UNIT	PAPER NUMBER
			2621	

DATE MAILED: 02/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/493,192

Applicant(s)

KANEKO ET AL.

Examiner

Hussein Akhavannik

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,4-9,11-24,26-31,33-38 and 40-48 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-9,11-21,24,26-31,33-38 and 40-48 is/are rejected.
- 7) ☒ Claim(s) 24,31 and 38 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments, see page 17, lines 7-18 of the Remarks, filed 09/29/2004, with respect to independent claims 1, 8, and 15 have been fully considered and are persuasive. The 35 USC 102 rejection of claims 1-2, 4-9, 11-16, and 18-23 has been withdrawn.
2. Applicant's arguments, see page 17, line 21 to page 18, line 10 of the Remarks, filed 09/29/2004, with respect to independent claims 24, 31, and 38 have been fully considered but they are not persuasive.

The Applicant alleges, on page 18, lines 1-4 of the Remarks, that "in actuality a plurality of representative points (or characteristic points) are included in the figure or object region so that the plurality of trajectory data ... are described for the points." The Examiner agrees, as the trajectory of a plurality of representative points is illustrated in the instant invention in figures 2C and 13C. The Applicant continues, on page 18, lines 4-7 of the Remarks, that "[w]ith such an operation the knot number (N) can be freely set for each point. Thus, the number of knots for trajectory of a point whose movement is small can be set to a small number so that an amount of data to be decreased can be reduced." The Examiner cannot find this limitation in the specification, figures, or independent claims 24, 31, or 38. As figures 2C and 13C illustrate, the trajectory is determined for every representative point in every frame where the object is present. Furthermore, compressing data in the manner argued would not have been obvious to one of ordinary skill in the art at the time the invention was made only because the Figure Type ID (3900 in figure 22 of the instant invention) contains a knot number (3902) and a function specifying information arrangement (3913). The Applicant is invited to explain where in the

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instant invention “limiting the number of knots for trajectory of a point whose movement is small” is explained.

Furthermore, independent claims 24, 31, and 38 do not require that the “respective time periods between knots” be altered depending on the movement of a point. Nevertheless, Abe et al explain in column 15, lines 30-49 that frames are deleted from trajectory determination when the movement of the region is linear. Abe et al explain that this processing is performed specifically “so the number of standard frames decreases, so the number of supposed paths also decreases and the calculation is consequently less laborious.” By deleting a standard frame, it’s respective knots will also be deleted, depending on the movement of the region.

***Allowable Subject Matter***

3. Claims 1-2, 4-9, 11-16, 18-23, and 47-49 would be allowable following a timely filed terminal disclaimer.

4. The following is a statement of reasons for the indication of allowable subject matter:

The closest cited prior art (U.S. Patent No. 5,970,504) does not teach or suggest the feature of “describing a first identifier indicating a figure type of the one of the predetermined approximate figures and a second identifier indicating a function type of the one of the predetermined functions” in view of the additional features recited in independent claims 1, 8, and 15. Abe et al do suggest multiple figures types in column 12, line 64 to column 13, line 5 and multiple function orders in column 13, lines 6-11. However, Abe et al do not suggest first and second identifiers. Claims 2, 4-7, 9, 11-14, 16, 18-23, and 47-49 are allowed for the same reason as stated above.

***Double Patenting***

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 1-2, 4-9, 11-16, 18-21, and 47-49 are rejected under the judicially created doctrine of double patenting over claim 1 of U. S. Patent No. 6,810,148 (herein Kaneko et al) since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows:

Referring to claim 1, which is representative of claims 8 and 15,

- i. Extracting position data of a representative point of one of predetermined approximate figures approximating the region from the plurality of frames is explained by Kaneko et al in claim 1 by the "key value data representing values of the points used to determine the trajectory". The points are representative points from the object region.
- ii. Approximating a temporal trajectory of corresponding representative points of successive frames with one of predetermined functions of time is explained by Kaneko et

al in claim 1 by “function data for indicating the trajectory of the at least one of the vertices”. The trajectory data is constructed using “time arrangement data including times of points used to determine the trajectory”.

iii. Describing a first identifier indicating a figure type of the one of the predetermined approximate figures and a second identifier indicating a function type of the one of the predetermined function as the region data is explained by Kaneko et al in claim 1 by “type data specifying a type of figure” and “information indicating an order of a function used to determine the trajectory or that no function is defined”.

Referring to claim 2, which is representative of claims 9 and 16, information specifying a leading frame or a trailing frame of the plurality of frames as the region data is explained by Kaneko et al in claim 1 by “time data indicating a start time and a duration time of the object region in the video sequence”.

Referring to claim 4, which is representative of claims 11 and 18, describing information of the number of approximate figures forming the region of an arbitrary object as the region data is explained by Kaneko et al in claim 1 by the “type data specifying a type of figure, corresponding to the object region ... the type data being described by an integer.”

Referring to claim 5, which is representative of claims 12 and 19, describing position data of knots of the trajectory and information specifying the trajectory used together with position data of the knots of the trajectory is explained by Kaneko et al in claim 1 by “key value data representing values of the points used to determine the trajectory, and function data for indicating the trajectory of the at least one of the vertices using information indicating an order of a function used to determine the trajectory or that no function is defined”.

Referring to claim 6, which is representative of claims 13 and 20, a plurality of the representative points or the characteristic points being included in a certain frame is explained by Kaneko et al in claim 1 by “a number of vertices which are representative points of the figure”. The region data including information specifying correspondence among a plurality of the representative points or characteristic points in the certain frame and a plurality of the representative points or characteristic points in an adjacent frame is explained by Kaneko et al in claim 1 by “a trajectory of at least one of the vertices, including: time arrangement data including times of points used to determine the trajectory, key value data representing values of the points used to determine the trajectory, and function data for indicating the trajectory of the at least one of the vertices using information indicating an order of a function used to determine the trajectory or that no function is defined”. A trajectory of a point in a video sequence is inherently between two adjacent frames.

Referring to claim 7, which is representative of claims 14 and 21, describing related information related to the object or information indicating a method of accessing the related information is explained by Kaneko et al in claim 1 by a “data signal for use in a video decoding apparatus and for describing information of a moving object region in a video sequence”.

Referring to claim 47, which is representative of claims 48 and 49, describing information indicating whether or not the function is predetermined and information indicating an order of the function is explained by Kaneko et al in claim 1 by “information indicating an order of a function used to determine the trajectory or that no function is defined”.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application

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which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968).

See also MPEP § 804.

### ***Claim Objections***

7. Claims 24, 31, and 38 are objected to because of the following informalities:

In claim 24, lines 9-10, “knots being approximated respective functions” should be changed to “knots being approximated by respective functions”.

In claim 31, line 10, “knots being approximated respective functions” should be changed to “knots being approximated by respective functions”.

In claim 38, lines 9-10, “knots being approximated respective functions” should be changed to “knots being approximated by respective functions”.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 24, 26-31, 33-38, and 40-46 are rejected under 35 U.S.C. 102(e) as being anticipated by Abe et al (U.S. Patent No. 5,970,504).

Referring to claim 24, which is representative of claims 31 and 38,

i. Extracting position data of representative points of an approximate figure approximating the region or characteristic points of the region from the plurality of



frames is explained by Abe et al in column 8, lines 35-56. The left upper points and the right lower points of each rectangular anchor region correspond to the representative points that represent the approximate figure (anchor) approximating a region. Abe et al illustrate that the coordinates of the representative points are stored in figure 5.

ii. Approximating trajectories of corresponding representative points or corresponding characteristic points of successive frames with spline functions including knots, the trajectories of respective points between knots being approximated by respective functions is illustrated by Abe et al in figure 6 and explained in column 8, line 57 to column 9, line 37. One (as depicted in figure 4) or multiple (as depicted in figure 6) linear function(s) (corresponding to spline functions) is/are determined to represent the trajectory between two vertices of each anchor in frames labeled as the start frame, the middle standard frame, and the end frame. Furthermore, Abe et al explain in column 13, lines 6-11, that a non-linear interpolation is acceptable in order to increase the accuracy of the interpolation, but at a cost of simplicity. The coefficient of the linear function explained by Abe et al in column 9, line 2 to be represented by the parameter  $\{A(t1) - A(t0)\}/\Delta t$ .

iii. Describing information indicating the trajectories for respective points and respective time periods between knots is illustrated by Abe et al in figure 17 and explained in column 15, lines 30-49. If no frames are deleted then the time between knots is illustrated by Abe et al in figure 4 by  $t$ .

Referring to claim 26, which is representative of claims 33 and 40, describing information of the type of the approximate figure as the region data is explained by Abe et al in column 12, line 64 to column 13, line 5.

Referring to claim 27, which is representative of claims 34 and 41, describing information of the number of approximate figures forming the region of an arbitrary object as the region data is illustrated by Abe et al in figure 8 by the anchor ID number.

Referring to claim 28, which is representative of claims 35 and 42, describing position data of the knots of the respective functions and information specifying the trajectory used together with position data of the knots is explained by Abe et al in column 8, lines 35-56. Abe et al explain that the position of the left upper and right lower points for the rectangle object (anchor) being tracked in the video described (as illustrated in figures 3 and 5).

Referring to claim 29, which is representative of claims 36 and 43,

- i. A plurality of the representative points or the characteristic points being included in a certain frame is explained by Abe et al in column 8, lines 35-56. The left upper and right lower points are included in every frame for each anchor in the frame.
- ii. The region data including information specifying correspondence among a plurality of the representative points or characteristic points in the certain frame and a plurality of the representative points or characteristic points in an adjacent frame is explained by Abe et al in column 8, lines 35-56 and illustrated in figures 3 and 5. Abe et al store the coordinates of the left upper and right lower points in each start, standard, and end frame in order to interpolate the position of the anchor in frames located between these frames.

Referring to claim 30, which is representative of claims 37 and 44, describing related information related to the object or information indicating a method of accessing the related information is illustrated by Abe et al in figure 8 by the link format and link information related to each anchor.

Referring to claim 45,

- i. Identification information of the object is illustrated by Abe et al in figure 5 by the anchor ID.
- ii. Information specifying a leading frame and a trailing frame of the plurality of frames is illustrated by Abe et al in figure 5 by the frame number.
- iii. Information related to the object is illustrated by Abe et al in figure 8 by the link format.
- iv. Information indicating a method of accessing the related information is illustrated by Abe et al in figure 8 by the link information.
- v. Information of the number of the approximate figure is illustrated by Abe et al in figure 8 by the anchor ID, which specifies the anchor number.
- vi. Approximate figure information which includes information of the type of the approximate figure is explained by Abe et al in column 12, line 64 to column 13, line 5.
- vii. Number information of the representative points is illustrated by Abe et al in figure 5 by the representative point numbers, given as x1 and x2 or y1 and y2.
- viii. Function data of the spline function approximating the trajectories of the representative points which includes knot information is explained by Abe et al in column 8, line 57 to column 9, line 15.

ix. Order information of the spline function is explained by Abe et al to be one in column 8, line 57 to column 9, line 15. However, Abe et al also provide higher order functions as explained in column 13, lines 6-11.

x. Coefficient information of the spline function is explained by Abe et al in column 9, line 2.

Referring to claim 46, this claim corresponds to claim 45 for characteristic points. The applicant defines characteristic points on page 69, lines 14-16 as any point, for example a corner of an object. Therefore, the left upper and right lower points explained by Abe et al may also correspond to characteristic points.

### ***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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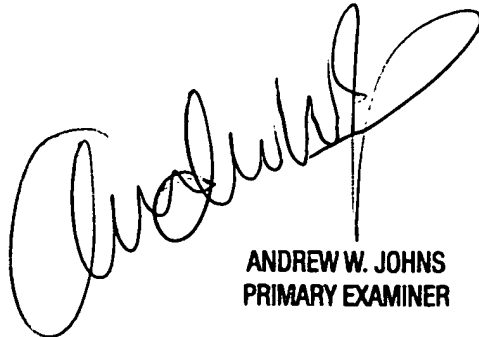
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hussein Akhavannik whose telephone number is (703)306-4049. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H. Boudreau can be reached on (703)305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hussein Akhavannik  
January 15, 2005

HA.



ANDREW W. JOHNS  
PRIMARY EXAMINER